APPENDIX A ADVANTAGES AND DISADVANTAGES OF DESIGN & BUILD

A ADVANTAGES

(1)	**FAST-TRACK**	**COMMENTS**
	From the approval of the Technical Feasibility Statement to completion of the Works, a D&B contract can be carried out faster than various corresponding stages in a conventional contract.	This has advantages where time for completion is financially advantageous or essential as part of an overall programme. The time required for pre-qualification of tenderers and to prepare an adequate Employer's Requirements should not, however, be ignored.
(2)	**CONTRACTORS' EXPERTISE**	
	Contractors' expertise in design and related construction methods is incorporated and is used at an earlier stage.	This is particularly valuable in specialised area. A conventional contract, for the most part, does not make use of this input.
(3)	**ECONOMY OF DESIGN**	
	Because the design is submitted in competition with others, there is great incentive for the design to be economical, both in concept and in detail.	See Item 8 - Disadvantages.
(4)	**PLANT AND LABOUR**	
	In a conventional contract, application of plant or labour saving proposals involving modifications of design is difficult to introduce particularly during construction. In contrast, in a D&B contract, because the Contractor is involved in the design stage, better use of plant and labour can be made by paying attention to these aspects in design.	In the Hong Kong situation where there are limitations on labour and plant, this is particularly valuable, apart from the saving of costs for the individual project.

(5) CONSULTANTS

Once a D&B contract is underway, the Contractor is solely responsible for producing design modifications and other requirements to meet his programme. A related advantage is that not all the detailed information has to be available at the start of the Contract.

In a conventional contract, often there are claims by the Contractor as a result of delay in receiving design information etc.

(6) CONSULTANT/ CONTRACTOR CONFLICT

Under a D&B contract the interface problem between the Employer's design consultant and the Contractor does not exist.

There is often conflict between the design consultants and the Contractor in a conventional contract.

(7) CLAIMS

Potential for a claim situation is significantly reduced because risk and responsibility for the design is on the Contractor with less opportunity for claims to be made.

Claims are, of course, possible under a D&B contract where the Employer's Requirements have been badly prepared and there may well be further Variations required.

(8) CONTRACTOR COORDINATION

During construction, the Contractor is responsible for coordinating all the parties involved including such matters as utilities and other services. Minor modifications to design to accommodate local service problems can easily be made.

Under a conventional contract, there is often delay in the designer sorting out problems, resulting in claims.

(9) PROFESSIONALISM IN THE CONTRACTING INDUSTRY

By recognising and using the design and construction expertise inherent in the contracting industry, the image of the industry is improved and the quality of contracting service is also enhanced.

Even where a Contractor employs consultants to do his design, it could be expected that the Contractor's expertise will influence design solutions.

(10) PROBLEM OR FAILURE IN THE WORKS

If a major construction problem or design failure occurs, during the construction of the Works, the Contractor is clearly responsible.

Normally this could either be the designer's or Contractor's fault and it is very often hard to attribute responsibility.

(11) PRODUCTIVITY OF STAFF

The need for the Employer to carry out detailed design in-house or to employ consultants for this purpose is greatly reduced.

Releasing the Employer's staff from detailed design duties would allow more time to effectively deal with such projects. The productivity of the Employer's staff involved in construction is therefore significantly improved.

(12) COSTS OF WORKS

Under D&B contract, the cost of the Works is known with greater certainty and at an early stage.

Subject, of course, to the Employer minimising changes.

(13) SUB-CONTRACT ARRANGEMENTS

The non-existence of nominated subcontractors or suppliers makes matters simpler for the Employer.

(14) OPERATION & MAINTENANCE MANUALS

Because a single party responsible for O&M Manuals is more consistent.

B DISADVANTAGES

(1) PREQUALIFICATION

A D&B contract requires a heavy input from tenderers.

The tenderer for D&B contract should be prequalified as necessary with reference to the guidelines given in Section 3.4.

Selection procedures for the shortlisting have to be regular and be fair, otherwise there is opportunity for corruption, or there may be a major outcry from dissatisfied contractors not shortlisted.

(2) NOT COMPETITIVE

In the conventional open tender situation, there is a better chance of getting a lower tender price than is the case with a short list of tenderers.

Often the tenderer who wins the Contract has under-estimated actual costs with resulting problems during the Contract. With the detailed tendering procedures required in a D&B contract, tenderers are not likely to have made any such mistake, and with the competitive element in the design, significant economies and costs are likely to be made compared with a conventional contract.

(3) DIFFICULTY OF COMPARING TENDERS

Since tenderers will be offering different designs, tender assessment is a more complicated matter which might not solely be ruled by lower price.

Guidelines set for tender assessment must be strictly adhered to.

(4) REDUCED EMPLOYER'S CONTROL DURING CONSTRUCTION

The Employer's ability to influence and supervise during construction is significantly reduced.	This should not be a problem if the Employer's Requirements require sufficient submission of detailed samples and other information for approval, and during construction the Design Checker(s) and Supervising Officer ensure compliance with the Employer's Requirements.

(5) LESS FLEXIBLE

A D&B contract must ensure that the Employer's right in varying the Works is safeguarded and at a realistic cost.	Variations should be kept to a minimum.

(6) CONTRACTOR'S DEFAULTS

If there is work left by a defaulting D&B contractor to be completed by others, legal problems of responsibility for the unfinished work may arise.	There are practical difficulties in a new contractor taking over another contractor's design.

(7) BRIEF REQUIREMENTS

The client needs to set out clearly and in detail exactly what he requires at a very early stage.	This exercise should be done for many reasons. A conventional contract requires even more information, specifications, designs, etc., at the time of tendering.

(8) UNDER-DESIGNED

There may be a tendency for the Contractor to design-down to save costs.	Careful approval of submitted design and checking during construction is essential to ensure required design and quality to minimise subsequent maintenance requirements and costs.

(9)	**CONTRACTUAL POWERS OF EMPLOYER**	
	The Employer has less control over the Contract.	The Employer's position can be safeguarded by the respective roles of the Design Checker/Supervising Officer.
(10)	**COSTS OF TENDERING**	
	Tendering costs are very high.	In the course of time these costs will be paid indirectly by the Employer. These costs can be reduced by limiting the number of tenderer by prequalifiication. In so far as it is possible, the Employer should provide maximum information to facilitate ease of tendering. Good cover and quality of site investigation information is necessary.
(11)	**NUMBER OF FIRMS LIMITED**	
	Not all firms are capable of doing D&B contracts. This could cause higher costs due to limited capacity of the industry.	The situation is unlikely to develop, as the growth of D&B contracts is likely to be gradual; and Controlling Officers would consider the capacity of the industry when considering D&B as an option.
(12)	**Late Start**	
	The construction may start quite a long time after the award of the contract.	Clear indication of the construction start date in the Employer's Requirement is necessary.